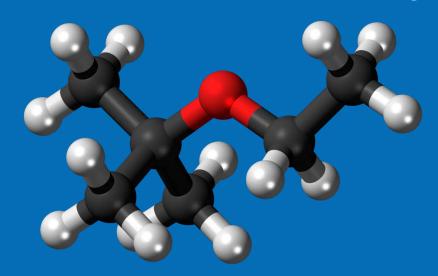


Preliminary Materials for the IRIS Assessment of Ethyl *tert*-butyl ether (ETBE)

Keith Salazar, Assessment Manager





General Information

- ETBE is a colorless liquid with a strong odor similar to gasoline, varnish or ether.
- Possible application of ETBE as an oxygenate for gasoline.

Exposure

- May occur through interaction with gasoline containing ETBE.
- General population could be exposed to vapors while refueling automobiles or by drinking contaminated groundwater.

Assessment History

2009- External peer review identifies additional JPEC studies.



Comprehensive Literature Search and Data Call-In

Completed lit searches posted on Web and announced in FRN

FRN requesting information about studies not in lit search and new research



Complete Draft IRIS Assessment



Internal Agency Review



Science Consultation on the Draft Assessment with other Federal Agencies and White House Offices

EPA coordinates Interagency review



5



Revise Assessment

Address peer review and public comments; prepare response to comments document



Independent Expert Peer Review, Public Review and Comment, and Public Listening Session

Draft assessment and peer review charge posted on Web site

Public comment period and Listening Session announced in FRN

Peer review meeting announced in FRN



Science feedback on final assessment from other Federal Agencies and White House offices



Post Final Assessment on IRIS

Includes IRIS summary, Toxicological Review and response to comments



<u>Preliminary Materials for the IRIS Assessment of ETBE</u>:

- Draft literature search strategy
- Draft literature search results
- Preliminary evidence tables
- Preliminary exposure-response arrays

*These materials are available online at:

http://www.epa.gov/iris/publicmeeting/iris_bimonthly-dec2013/mtg_docs.htm

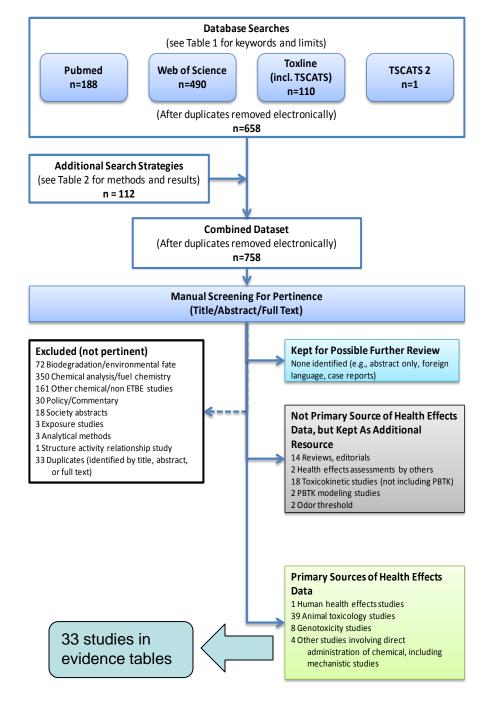


Literature Search Strategy

- •The literature search identified more than 700 studies for ETBE.
- 90 references are being considered for the assessment after an initial screen for relevance.

Data Extraction to Evidence Tables

 33 references directly informing hazard identification are described in evidence tables.





Features of the ETBE Database

	Chronic	Subchronic	Two-Gen Repro/Dev	MOA Information	PBPK
Oral	✓	✓	✓	✓	
Inhalation	✓	✓		✓	✓

• Human data on exposures to ETBE consist of a human TK study



Endpoints with Data for Evaluating Hazard

- Kidney Effects
- Liver Effects
- Reproductive and Developmental Effects
- Cancer
- Other Systemic Effects
- Genotoxic Effects

Scientific Considerations

- PBPK modeling
 - Metabolized to *tert*-butanol & acetaldehyde
- Kidney MOA
 - Alpha2u-globulin-associatednephropathy
 - Chronic progressive nephropathy (CPN)
- Liver MOA
 - PPAR
 - PXR/CAR
 - ALDH2



EPA welcomes all comments, such as:

- Clarity and transparency of materials
- Additional approach for identifying studies
- Selection of studies for data extraction
- Study quality considerations
- Additional studies that may inform the assessment